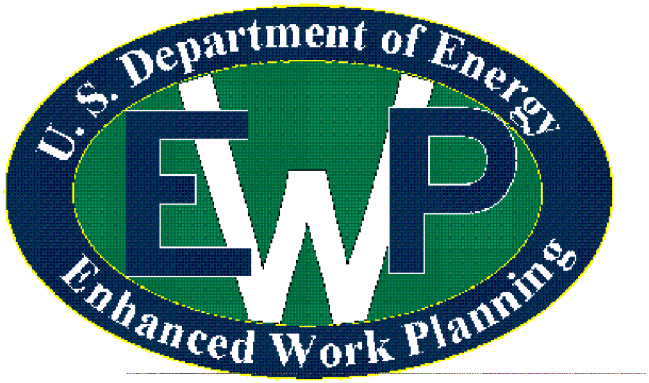
PANTEX PLANT
ENHANCED WORK PLANNING
INFORMATION KIT



Revised: December 1996

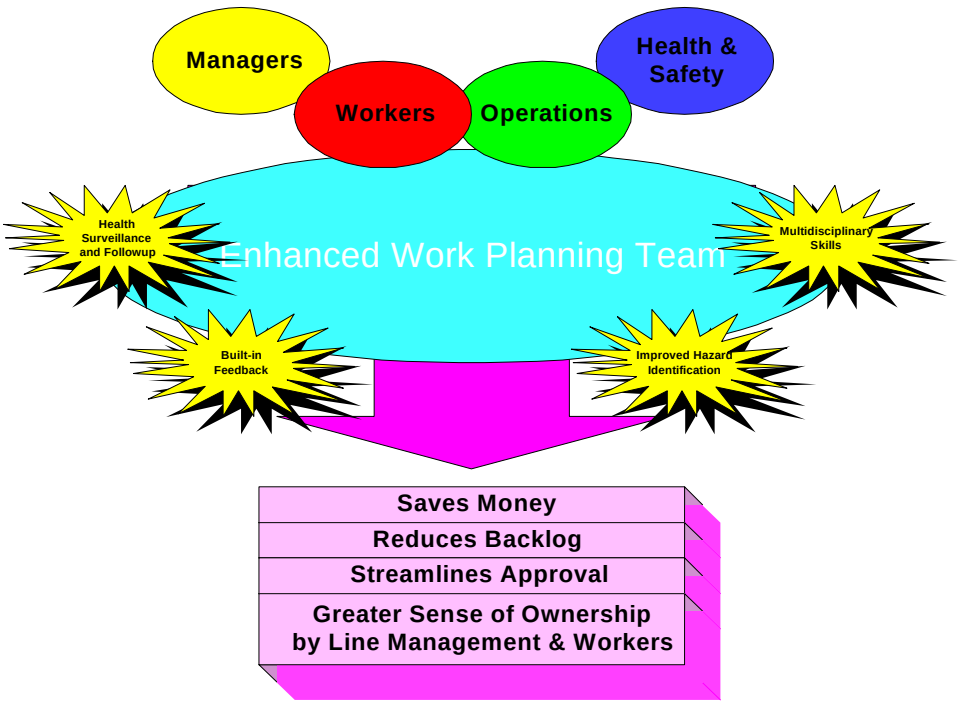
Overview

Enhanced Work Planning (EWP) is a work management philosophy originally implemented as a means of addressing the ineffectiveness of traditional management structures in ensuring the prevention of work-related accidents, injuries, and illnesses at DOE facilities. The basic tenets of this philosophy are: (1) An improved planning process that identifies risks early in the work planning cycle, (2) Multidisciplined project or process planning teams, (3) Use of parallel (instead of sequential) work review processes, (4) Replicating practices that have been proven successful at other DOE and commercial sites and (5) Employee involvement.

Recent DOE experience with EWP has demonstrated a 40% to 50% reduction in OSHA recordable injuries, lost/restricted workday cases, and skin contaminations. Equally important however, is that there have also been dramatic productivity improvements, cost savings and cost avoidances for virtually every EWP pilot project. EWP managed projects have been demonstrated to be 20% to 60% more efficient than the traditional command and control techniques. Implementation of EWP at DOE sites has clearly demonstrated that safety, productivity, and cost control are inextricably linked and that performance in each of these areas can be improved through the implementation of EWP principals in planning and executing work.

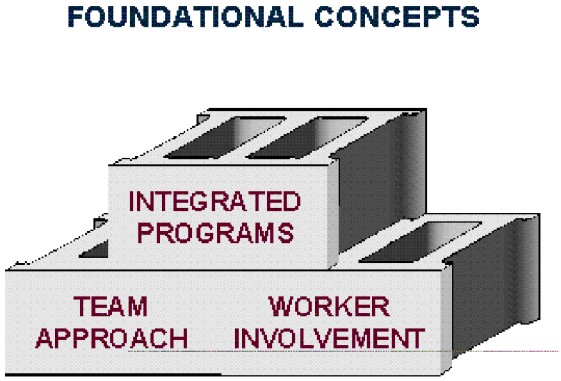
From the success of EWP techniques within the DOE, it is not surprising that virtually every DOE site that has started an EWP pilot project has decided to implement these techniques on a sitewide basis.

DOING THE JOB SAFER AND BETTER



Why EWP Works

EWP is the maturation of several concepts and programs that have been implemented with varying degrees of success within not only DOE, but within general industry as well. For anyone familiar with, Total Quality Management, Continuous Improvement Teams, Quality Circles, Performance Based Safety Management, Deming, or Communities of Practice there will be certain elements within EWP that are familiar. EWP is however less structured and organizational changes are generally not needed to implement EWP.



At virtually every site where EWP has been implemented, the process has been successful in terms of improving both safety and efficiency. There are several factors that contribute to the success of EWP techniques including:

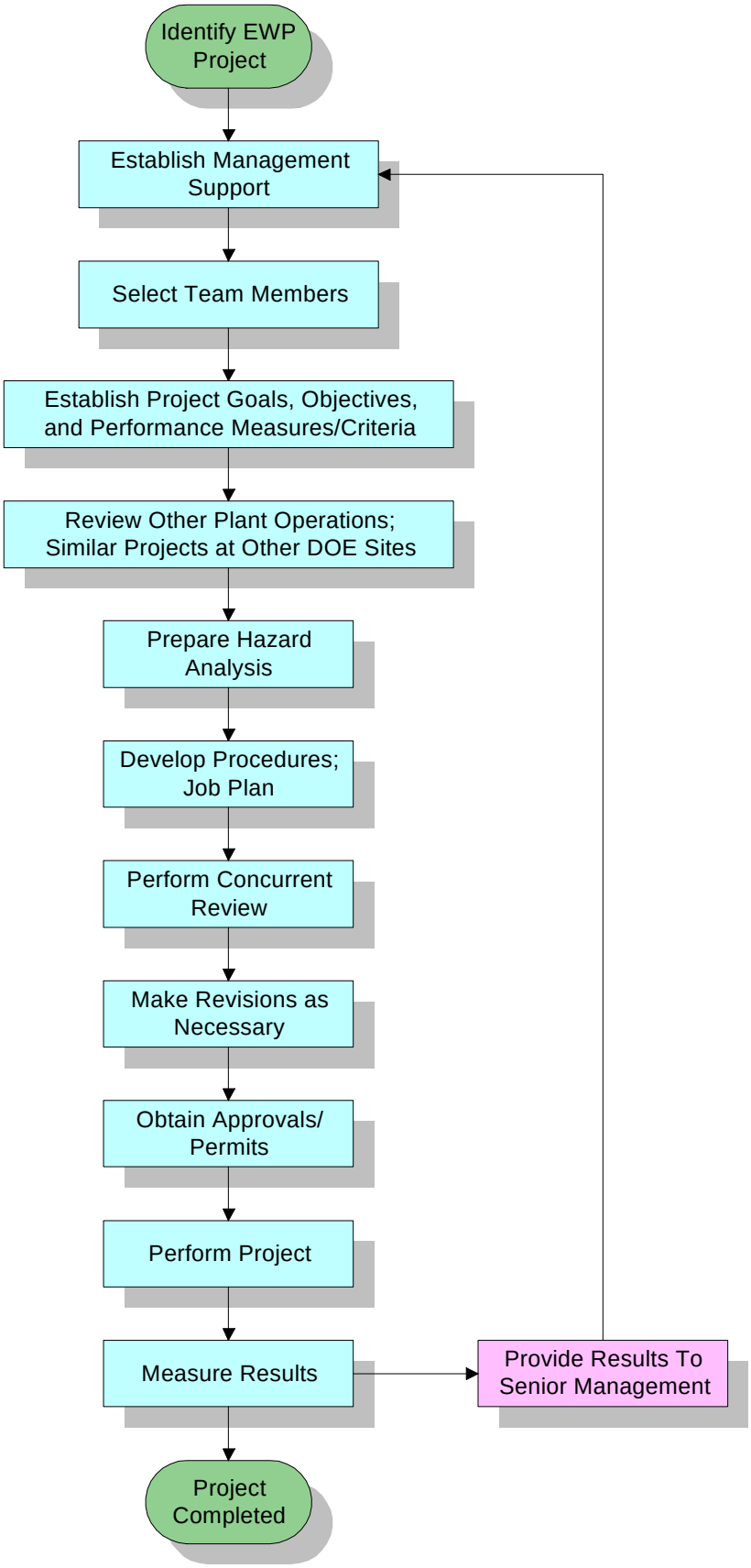
- Improvements in inter-organizational communications at the sites where EWP has been implemented.
- The application of a collective knowledge base toward problem solving in place of the traditional system of "reviewing-in" safety and quality.
- Proactive problem solving instead of reactive problem solving through early identification and control of hazards and risks.
- Involvement in the planning process by the personnel most familiar with the job and its inherent problems and risks.
- The ability to capitalize on the successes of other efforts within DOE and industry through participation in a complex-wide EWP communication network.

EWP Implementation at Pantex

EWP is a work management and control philosophy (not a safety program), that results in improvements in both safety and overall efficiency. There are not any Orders, Directives or Standards dictating if or how EWP should be implemented. Each organizational unit is free to decide how EWP implementation fits its needs. Typically, an organization will identify a pilot project to develop and manage that project under the EWP philosophy as a means to prove the concept ; then, based on the success of the pilot project, extend EWP concepts to other work.

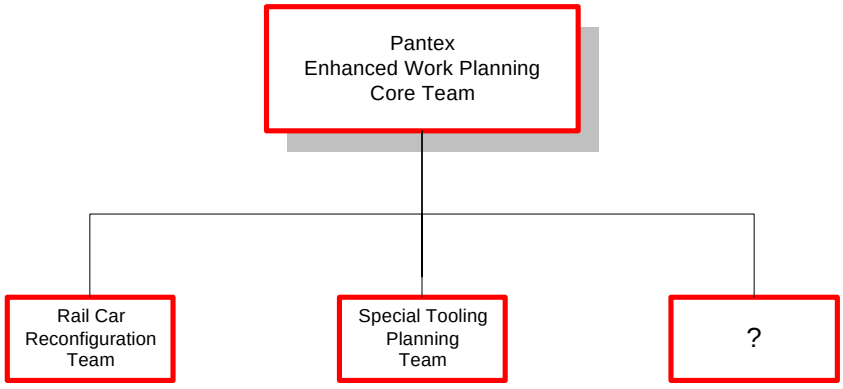
At Pantex, an EWP Core Team has been established to coordinate EWP implementation and assist various organizations within the plant in developing their own teams. The Core Team has responsibility for coordination of EWP training, utilization of outside resources, interfaces with outside organizations and the preparation of overall Plant EWP progress reports.

PANTEX EWP IMPLEMENTATION PROCESS



Individual Departments are responsible for determining whether they want EWP teams and establishing EWP teams where warranted. Departmental EWP teams are expected to maintain an interface with the Core Team and provide representation at Core Team meetings.

Pantex EWP Organization



For Managers: How to Manage EWP Projects

Experience in DOE and in general industry has shown that EWP is most effective if it is "supported" instead of "managed". One of the general characteristics of team structures is that they are self-managing; they will work where the collective experience and knowledge of the entire group can be applied to identifying and solving problems. Managers support the EWP team-based process by:

- Providing EWP teams with a place to meet.
- Supporting participation by hourly/weekly participants. Some participants may meed a charge code to account for time attending EWP meetings, training, etc.
- Supporting EWP participant interaction with other DOE sites and facilities. EWP participants must interact with other DOE sites and facilities which will sometimes involve travel to EWP workshops and other sites.
- Assisting in the implementation of changes recommended by the EWP team

How to Organize an EWP Team

An EWP team is given a specific charter or mission at the time it is defined. This charter defines the mission of the Team and identifies team members and leadership. Early in the EWP implementation process, members are usually volunteers, but at sites where the EWP process is maturing, participation in the EWP team process is becoming a normal part of employee assignments. Some individuals (particularly safety and health professionals) may be participants in several separate EWP teams. At most DOE sites, EWP team composition is not rigidly defined; often certain individuals participate on a temporary basis depending on need.

Membership will normally consist of 5 to 18 persons representing various organizations having an interest or responsibility in the success of the effort. Teams should include membership/participation from all the organizations that are significant contributors or stakeholders in completing the assigned mission successfully. The team leader is often a supervisor or project manager with a strong interest in the project. Membership should as a minimum include representatives from health & safety, radiation protection, hourly/weekly workers, supervision, maintenance, etc. There must be a strong representation by those who will be performing the work. Team composition can be fluid. For example, participation by a certain group such as radiation safety or medical, may only be needed for a short time to address a specific issue. For complex projects, it is not uncommon or inappropriate to invite design agency or DOE participation on EWP teams.

EWP Team Functions

In application, the EWP team functions in accordance with a written charter or mission statement provided at the time the team is established The team then functions in what is largely a project management roll identifying issues, hazards and risks associated with the defined activity. Team meetings are held on whatever frequency the team feels is appropriate for their needs. The objective of an EWP team is to:

- Identify and document all current practices and performance in clear, quantitative terms. This should include identification of all hazards and risks, including those relating to health and safety, cost, and schedule. The terminology commonly applied to this portion of the effort is "baselining".

- Establish goals and performance measures against which current performance and future progress can be evaluated. Depending on the project, goals should address health and safety performance as well as performance relating to cost and schedule.

- Working as a Team, apply the EWP principles to the project.

  (1) Begin by using the team's collective knowledge and experience in identifying associated risks early in the work planning cycle.

  (2) Make use of a multidisciplined project or work planning process; ask for involvement by everyone who historically has an interest or stake in the success of the effort. Seek the participation of health and safety, DOE and design agency personnel when appropriate.

  (3) Establish parallel (instead of sequential) work review processes; In so far as possible, reviews should be completed as a part of project or process planning.

  (4) Find out what practices that have been proven successful at other DOE and commercial sites and replicate these practices at Pantex, and

(5) Seek out the knowledge and experience of those closest to the work. Experience has shown that the workers most familiar with the job or process often have the best ideas on how to improve performance

- Develop and implement changes in procedures and processes where needed to facilitate EWP principles.

- Document lessons learned, value added, cost savings, safety performance, and other aspects of the project.

- Share EWP successes and failures with other EWP teams and sites.

What Kinds of Projects are Suited to EWP Techniques?

Projects chosen for EWP implementation are usually those where input is needed from a variety of different organizations in completing a task or mission or where there are significant safety, cost, or schedule risks. EWP techniques are effective for either large or small tasks where specific end points or goals can be defined. Most DOE sites have chosen to use EWP to address complex tasks/processes where the need for improvement was generally recognized, but where previous attempts at improvement have been frustrated by organizational issues as "stove-piping," organizational bureaucracy, or complex safety and health risks. Maintenance work planning is often selected as a first EWP project, but any complex project or task could be managed using EWP concepts. The first Pantex EWP project was a new task, the railcar reconfiguration project.

Table I
Typical Work Planning Problems That Can Be Addressed By EWP Techniques

- Identification and approval process is redundant and/or inefficient
- Planning process is redundant and/or inefficient
- Scheduling process is redundant and/or inefficient
- Coordination process is redundant and/or inefficient
- Execution process is redundant and/or inefficient
- Employees are disenfranchised from system
- Employees lack faith in S&H analysis
- Work control process is too time consuming
- Work must be rushed due to long process
- Information is not effectively communicated to employees
- Work control process (e.g., planning, design, scheduling, approvals) tempts employees to bypass system
- Compromises are often made to get approval of plans
- Planning process is not consistent, and therefore causes problems .
- Elements of hazard recognition, evaluation and control not consistently applied (e.g.; PPE)
- Hazard-based, graded approach isn't employed to achieve employee protection
- "Team" concept not routinely employed

Other examples of EWP project activities within the DOE complex include:

- Use of skill-of-craft to reduce work order paperwork
- Improvements in construction project review cycles through use of team techniques
- Elimination of redundant, obsolete, and unnecessary maintenance work
- Conversion from hard-copy to electronic work order processing

The kinds of tasks or functions where EWP may not have benefit are those tasks that do not pose significant cost, schedule, or safety risks or those that do not require participation by several individuals or organizations.

EWP Costs

An EWP project should be undertaken only if there is an identifiable safety improvement, efficiency, cost reduction or cost avoidance within the mission of the project. At all DOE sites where EWP projects have been implemented, there have been verifiable improvements in terms of decreased worker injuries, cost avoidance, cost savings, and increases in productivity. EWP implementation presumes team participation; interaction with other DOE sites will involve some travel costs and rescheduling of individual time commitments to support team activities. Most DOE sites have chosen to invest in computerized improvements in their maintenance or other work management systems as a result of the EWP process. While software and system costs in these cases were often significant, they have been undertaken with the expectation of verifiable cost and productivity benefits.

Technical Assistance

DOE EH has taken the lead in defining a Technical Assistance Program involving EH, DOE Program Offices, Operations Offices, and DOE's management and operating contractors. As a part of this effort, DOE is seeking out and communicating successes within the DOE and general industry to ensure that all the DOE sites benefit. This is accomplished by coordinating assistance from outside technical experts, health and safety professionals, managers, and operating contractor personnel where requested by individual EWP sites.

Technical Assistance is available to Pantex EWP teams in a variety of areas including:

- Occupational Safety and Health
- Conduct of Operations
- Maintenance and Work Controls
- Radiological Controls
- Waste Characterization
- Issues Management
- Industrial Hygiene
- Worker Safety
- Construction Safety
- Event Critique and Analysis
- Specialized Training

Requests for EWP outside technical assistance will be coordinated through the Pantex EWP Core Team.

Pantex EWP Contacts

For more additional information concerning EWP or assistance on starting an EWP project in your area, contact any EWP Core Team Member; the Pantex EWP Core Team members are:

Chris Cantwell (Chairman) - ext. 4433
Bob Young (AAO) - ext. 3132
Skip Maas - ext. 5846
Larry Mabry - ext. 6213
Don Schumaker - ext. 3483
Ron Zerm - ext. 4496